

NEWFOUND LAKE

2019 SAMPLING HIGHLIGHTS

Whittemore Brook Subwatershed

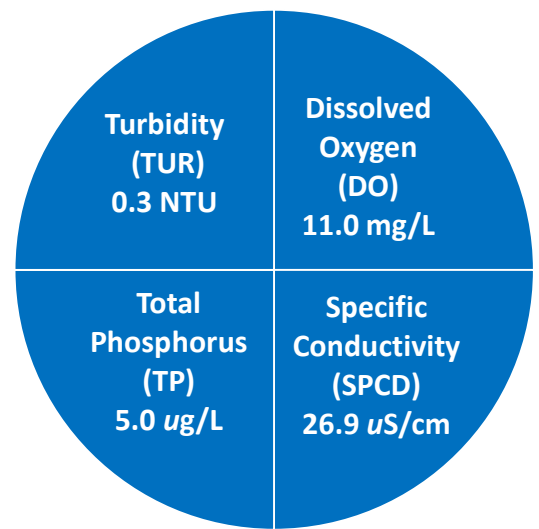


Blue = Excellent

Yellow = Fair

Red = Poor

Light Gray = No Data



**Figure 1. Whittemore Brook Subwatershed
Average Water Quality (2019)**

Table 1. 2019 Whittemore Brook Subwatershed Seasonal Average Water Quality Measurements.

Parameter	Assessment Criteria					Whittemore Brook Subwatershed Average (range)	Whittemore Brook Subwatershed Classification
Turbidity * (NTU)	< 0 - 5.0 Desirable	6 - 10 Low Impact	11 - 50 Moderate impact	51 - 100 Moderate - high impact	> 101 High impact	0.3 NTU (range: 0.2 - 0.4)	Desirable
pH (standard units)	< 5.5 suboptimal for successful fish growth and reproduction		5.5 - 6.5 sufficient for successful fish growth and reproduction		6.5 - 8.5 optimal range for fish growth and reproduction	6.6 standard units (range: 6.5 - 6.9)	Optimal range for successful fish growth and reproduction
Dissolved Oxygen (mg/L)	< 5 Suboptimal for successful brook trout growth and survival		> 5 Typically sufficient for successful brook trout growth and survival			11.0 mg/L (range: 8.4 - 13.5)	Typically sufficient for successful brook trout growth and survival
Specific * Conductivity (uS/cm)	0 - 100 Normal	101 - 200 Low Impact	201 - 500 Moderate Impact	> 501 High Impact		26.9 uS/cm (range: 14.3 - 43.5)	Normal
Total * Phosphorus (ug/L)	< 10 ug/L Ideal	11 - 25 Average	26.0 - 50.0 More than desirable	> 51 Excessive		5.0 ug/L (range: 3.3 - 8.3)	Ideal

* Water quality assessment criteria are provided by the New Hampshire Department of Environmental Services for general guidance only. Natural variations among rivers and streams will occur and should be considered when interpreting the water quality data.

Table 2. 2019 Whittemore Brook Subwatershed Seasonal Average Water Quality Inter-comparison among Sampling Stations.

Site ID *	Average Turbidity (NTU)	Average Specific Conductivity (uS/cm)	Average Total Phosphorus (ug/L)	Average Dissolved Oxygen (mg/L)	Average pH (standard units)
WTB H04	0.2	31.0	4.2	11.0	6.6
WTB U10	0.4	22.9	5.8	10.9	6.6

* Refer to Figure 4 for a map of the sampling locations.

Whittemore Brook Subwatershed Highlights

The Whittemore Brook subwatershed is the fifth largest stream drainage network that feeds into Newfound Lake. The 2,059-acre Whittemore Brook subwatershed is monitored with two active sampling locations that are positioned at an upstream and a downstream point along Whittemore Brook. Sampling locations were selected to characterize the overall water quality and to screen for potential problem areas within the Whittemore Brook subwatershed.

The 2019 Whittemore Brook water quality measurements generally indicate high water quality between the sampling sites. Variations in average specific conductivity concentrations (a surrogate for salt runoff) between sites existed in 2019 (Figure 2). Specific conductivity measurements at the upstream, WTB U10, sampling location, were lower than measurements at the downstream, WTB H04, sampling location. Historical specific conductivity measurements collected between 2010 and 2018 have generally been more consistent between the upstream and downstream sampling locations (Figure 2).

The 2019 average turbidity (suspended soil and other particles) and average total phosphorus (nutrient) concentrations were low in the Whittemore Brook subwatershed (Figure 3).

Dissolved oxygen concentrations remained sufficient to support successful fish growth and reproduction.

Figure 2. Whittemore Brook Subwatershed Specific Conductivity

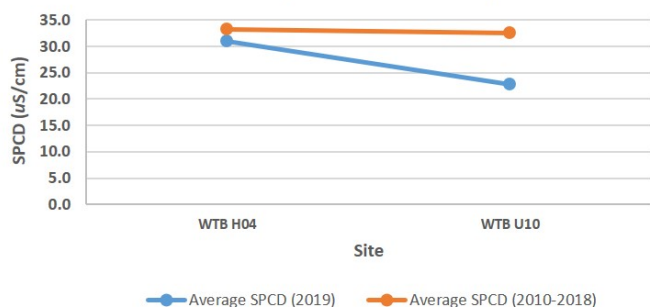


Figure 3. Whittemore Brook Subwatershed Total Phosphorus

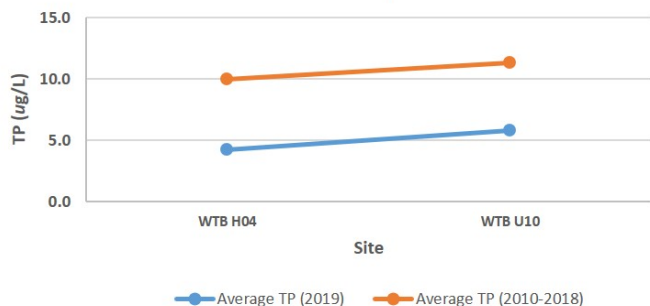


Table 3. Comparison of Seasonal Average Water Quality by Subwatershed (2019)

Subwatershed	Average * Turbidity (NTU)	Average * Specific Conductivity (uS/cm)	Average * Total Phosphorus (ug/L)	Average * Dissolved Oxygen (mg/L)	Average * pH (Standard Units)
Black Brook	2.2	159.6	9.3	12.2	6.4
Cockermouth River	0.5	39.9	4.9	11.8	6.4
Dick Brown Brook	0.9	40.2	7.7	10.5	6.6
Fowler River	0.6	29.3	7.7	10.9	6.3
Georges Brook	0.5	39.0	6.8	10.8	6.4
Hemlock Brook	0.4	36.7	5.4	10.8	6.8
Whittemore Brook	0.3	26.9	5.0	11.0	6.6
Tilton Brook	0.4	107.3	7.5	11.1	6.7

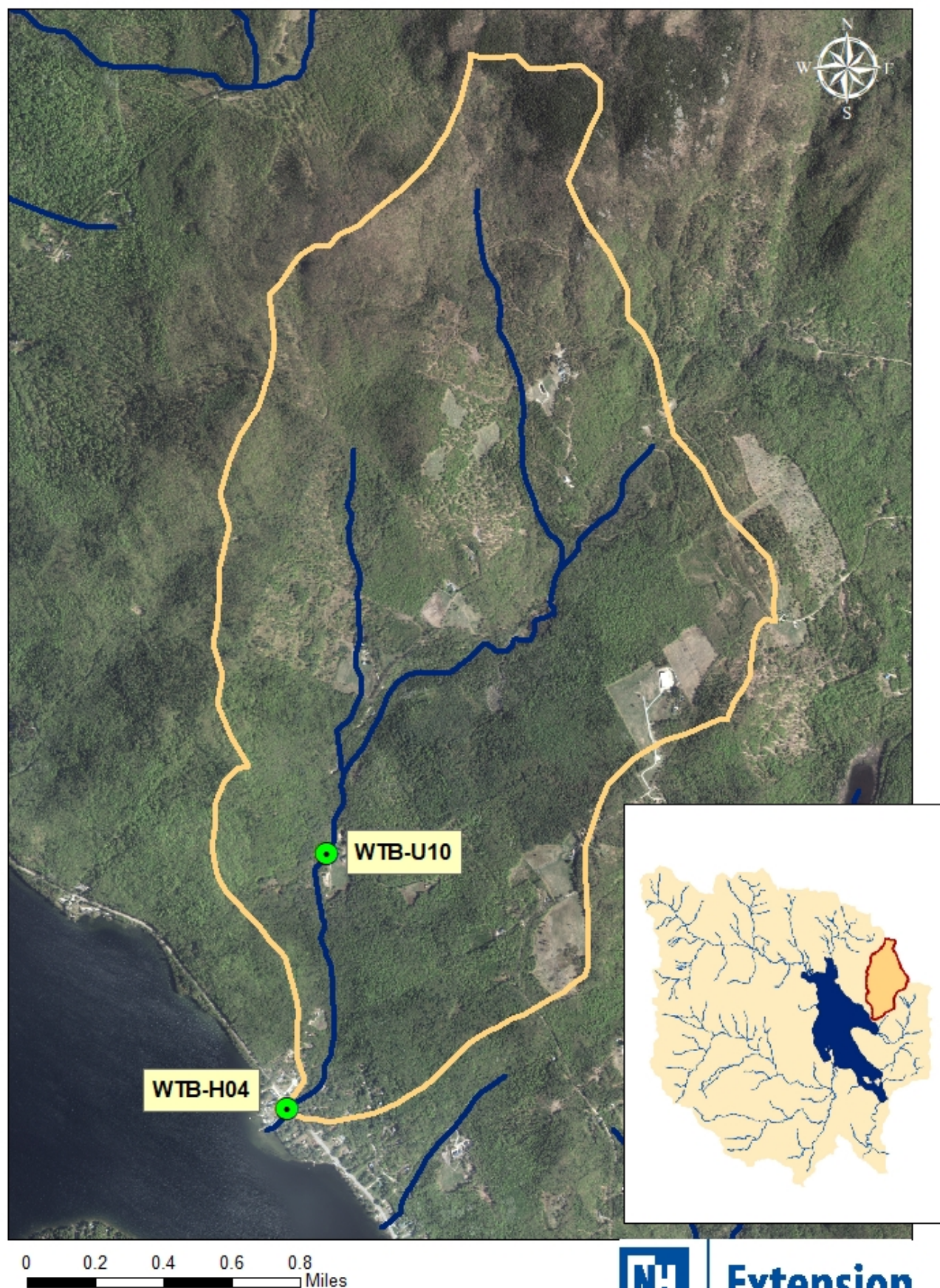
* The displayed water quality results are average values for all sampling locations within the respective subwatersheds.

Recommendations for Property Owners:

Implement Best Management Practices within the Newfound Lake watershed to minimize the adverse impacts of polluted runoff and erosion into the lake. Refer to “Landscaping at the Water’s Edge: An Ecological Approach” and “New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home” for more information on how to reduce nutrient loading caused by overland run-off.

- https://extension.unh.edu/resources/files/Resource004159_Rep5940.pdf
- <https://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf>

Figure 4.
2019 Sampling Highlights - Whittemore Brook Subwatershed



Aerial Orthophoto Source: NH GRANIT
Site location GPS coordinates collected by the UNH Center for Freshwater Biology



Extension